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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,804	10/31/2003	Scott K. Brown	06975-450001	1159
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FISH & RICHARDSON P.C. P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			EXAMINER WEINTROP, ADAM S	
			ART UNIT 2145	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/697,804

Applicant(s)

BROWN ET AL.

Examiner

Adam S. Weintrop

Art Unit

2145

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Objections*

1. **Claims 13 and 31** are objected to because of the following informalities:

Regarding **claims 13 and 31**, the term "a content source" in claim line 2 has already been defined and should be replaced with --the content source-- to improve the clarity of the claim language.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claim 12** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding **claim 12**, the claim recites the term "the first client". This term lacks antecedent basis and is unclear as to what it refers to: the client or the first content source.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1-7, 11, 13-15, 17-25, 29, 31-33, and 35-37** are rejected under 35 U.S.C. 102(b) as being anticipated by Choquier et al. (US 5,774,668).

Regarding **claims 1, 19, and 37**, Choquier et al. anticipates:

A method of enabling a client to access content, the method comprising:  
receiving an instruction indicating a client request to access content (column 9, lines 9-11 and column 13, lines 41-42, with a user requesting service, and the service can be content);  
accessing a list of content sources capable of rendering the content for which access is requested by the client (column 13, lines 42-57, where the service map is read, seen as accessing a list of sources capable of rendering the content);  
determining a performance metric for at least two of the content sources (column 14, lines 46-49, where reading the service map to obtain performance metrics such as CPU load and CPU index for the servers is done); and  
selecting among the content sources based on the performance metric to identify

a content source to be accessed by the client (column 14, lines 56-59, with the selecting of the server being performed).

Regarding **claims 2 and 20**, Choquier et al. anticipates:

The method of claim 1 or the system of claim 19 further comprising accessing the content source selected (column 14, lines 56-59, with the open request being passed on to the server after selection, seen as accessing the content).

Regarding **claims 3 and 21**, Choquier et al. anticipates:

The method of claim 1 or the system of claim 19, further comprising monitoring communications exchanged with the content source selected to determine a selected connection state to determine if an alternate content source should be accessed (column 23, lines 55-60, with load monitoring of the servers being done, seen as monitoring communications exchanged with the source, and column 24, lines 18-28, where the connection state determines server additions or removals, and column 24, lines 35-53, where monitoring of communications determines a connection state, which determines if alternate content sources should be accessed).

Regarding **claims 4 and 22**, Choquier et al. anticipates:

The method of claim 3 or the system of claim 21 further comprising repeating the determining and selecting when the selected connection state indicates that the alternate content source should be accessed (column 24, lines 45-48, with the newly added servers based on the monitored connection states are load balanced, and column 14, lines 46-49, where reading the service map to obtain performance metrics such as CPU load and CPU index for the servers is done and column 14, lines 56-59, with the selecting of the server being performed).

Regarding **claims 5 and 23**, Choquier et al. anticipates:

The method of claim 3 or the system of claim 21 further comprising monitoring the state of at least one of the content sources not selected from within the list of content sources so that the alternate content source may be selected when the connection state indicates the alternate content source should be accessed (column 23, lines 55-59, with the servers being reallocated to different service groups automatically, seen as monitoring the state of servers not on the list, or the service map, so that they can be added to the service map if they need to be, seen as selecting the alternate source as seen in column 24, lines 18-28).

Regarding **claims 6 and 24**, Choquier et al. anticipates:

The method of claim 1 or the system of claim 19 wherein receiving the list of content sources includes receiving the list of content sources from a host (figure 1, where the local map (140) and service maps (136) are stored on the Gateways (126) and App Servers (120), therefore the list of sources is received from a host).

Regarding **claims 7 and 25**, Choquier et al. anticipates:

The method of claim 6 or the system of claim 24, wherein the list of content sources is received in response to authenticating (column 2, lines 29-33, where a user logs on to the network, seen as authenticating, and the list of sources is accessed upon a request for service as seen in column 2, lines 44-56).

Regarding **claims 11 and 29**, Choquier et al. anticipates:

The method of claim 1 or the system of claim 19 wherein determining the performance metric includes identifying a first content source able to sustain an identified throughput rate (column 10, lines 24-30, where the load of each server is seen as a way to determine an identified throughput rate, since as load increases, throughput reduces and vice versa).

Regarding **claims 13 and 31**, Choquier et al. anticipates:

The method of claim 1 or the system of claim 19 wherein determining the performance metric includes identifying a content source with a highest throughput rate (column 10, lines 24-30, where the load of each server is seen as a way to determine an identified throughput rate, since as load increases, throughput reduces and vice versa, and the servers are chosen based on their rankings, where a higher ranking is given to a lower loaded server, as seen in column 14, line 60-column 15, line 6).

Regarding **claims 14 and 32**, Choquier et al. anticipates:

The method of claim 1 or the system of claim 19 wherein determining the performance metric includes ranking at least two of the content sources (column 14, line 60-column 15, line 6, where selecting the server with a higher performance is seen as ranking the content sources).

Regarding **claims 15 and 33**, Choquier et al. anticipates:

The method of claim 14 or the system of claim 32 further comprising using the ranking to select a backup content source to be accessed when the content source selected for access experiences an interrupt condition (column 23, lines



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41-51, where servers can be removed from groups, seen as an interrupt condition, and column 24, lines 35-53, where the service map is used for accessing backup content sources if another server is removed, and column 14, line 60-column 15, line 6, where selecting the server with a higher performance is seen as using the ranking of the content sources to choose a backup server).

Regarding **claims 17 and 35**, Choquier et al. anticipates:

The method of claim 14 or the system of claim 32 further comprising establishing and maintaining a connection to one or more of the content sources not selected from among the list while accessing the content source selected (column 23, lines 41-51, where the service is established from the content source selected, and column 24, lines 35-53, where getting the service map updates from servers added and removed and keeping them on the map until a next update is seen as establishing and maintaining a connection to the other content sources while the content source selected is being accessed).

Regarding **claims 18 and 36**, Choquier et al. anticipates:

The method of claim 14 or the system of claim 32 further comprising switching to one of the content sources not selected from the list when access to the content source selected is determined to be inferior to access available using the content

source that is accessed (column 24, lines 15-34, where servers are removed from groups based on their conditions, seen as inferior access conditions if the load is too high, and column 24, lines 35-53, where the service map is used for accessing alternate content sources if another server is removed).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 8-10, 16, 26-28, and 34** are rejected under 35 U.S.C. 103(a) as being unpatentable over Choquier et al. (US 5,774,668) in view of She et al. (US 7,133,922).

Regarding **claims 8 and 26**, Choquier et al. discloses all of the limitations as described above except for using polling request to determine performance metrics. The general concept of polling servers to determine performance metrics of at least 2 servers is well known in the art as illustrated by She et al. She et al. teaches querying nodes to receive their performance metrics (column 10, lines 32-67). It would have been obvious to one of ordinary skill in the art at the time of invention to modify Choquier et al. with using polling of nodes to determine performance metrics as taught by She et al. in order to add real time

data to the server databases for real time load balancing as to increase the quality of the streams.

Regarding **claims 9 and 27**, Choquier et al. discloses all of the limitations as described above except for using stream request to poll. The general concept of polling servers using stream request is well known in the art as illustrated by She et al. She et al. teaches querying nodes to receive their performance metrics (column 10, lines 32-67). The request includes a query for quality index that is a measurement of streaming observations, thus is a request for stream performances to observe actual bit rate. It would have been obvious to one of ordinary skill in the art at the time of invention to modify Choquier et al. with using polling of nodes as stream requests as taught by She et al. in order to add real time streaming observation data to the server databases for real time load balancing as to increase the quality of the streams.

Regarding **claims 10 and 28**, Choquier et al. discloses all of the limitations as described above except for identifying the first source to respond to the polling request. The general concept of identifying the first content source in response to a polling request is well known in the art as illustrated by She et al. She et al. teaches querying nodes to receive their performance metrics (column 10, lines 32-67). The responses are added to databases, and these entries are identified

as they are entered into the list (column 9, lines 48-58, where as entries are added to the content URL heading, they are identified, and the first to respond would be identified as well). It would have been obvious to one of ordinary skill in the art at the time of invention to modify Choquier et al. with using polling of nodes to identify the first to respond as taught by She et al. in order to add real time data to the server databases for real time load balancing as to increase the quality of the streams.

Regarding **claims 16 and 34**, Choquier et al. discloses all of the limitations as described above, including connecting to content sources not originally selected (column 23, lines 41-51, where the service is established from the content source selected, and column 24, lines 35-53, where getting the service map updates from servers added and removed and keeping them on the map until a next update is seen as establishing and maintaining a connection to the other content sources while the content source selected is being accessed), however Choquier et al. does not disclose maintaining a relative ranking by polling requests to the content sources. The general concept of maintaining a relative ranking by polling requests to the sources is well known in the art as illustrated by She et al. She et al. teaches querying nodes to receive their performance metrics (column 10, lines 32-67). The responses are ranked by selecting the best fit for the stream (column 10, line 62-column 11, line 2). It would have been obvious to one of ordinary skill in the art at the time of invention to modify Choquier et al. with using

relative rankings by polling requests as taught by She et al. in order to add real time data to the server databases for real time load balancing as to increase the quality of the streams.

8. **Claims 12 and 30** are rejected under 35 U.S.C. 103(a) as being unpatentable over Choquier et al. (US 5,774,668) in view of Nilsson et al. (US 2005/0172028).

Regarding **claims 12 and 30**, Choquier et al. discloses all of the limitations as described above except for identifying the first content source that sustains a throughput rate for a specified duration. The general concept of identifying the first content source that sustains a throughput rate for a specified duration for a performance metric is well known in the art as illustrated by Nilsson et al. Nilsson et al. teaches switching a data stream on a predetermined condition (section 0016), and that the predetermined condition monitored for is a throughput rate during an interval (section 0048-0053). It would have been obvious to one of ordinary skill in the art at the time of invention to modify Choquier et al. with identifying the first content source that sustains a throughput rate for a specified duration as a performance metric as taught by Nilsson et al. in order to improve streaming quality by providing stream observations as the load balancing metric.

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

"On multiple description streaming with content delivery networks"

(Apostolopoulos et al.) describes Content Delivery Networks and load balancing applications.

"Research and design of a mobile streaming media content delivery network"

(Wee et al.) describes Content Delivery Networks and dynamic load balancing.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adam S. Weintrop whose telephone number is 571-270-1604. The examiner can normally be reached on Monday through Friday 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Cardone can be reached on 571-272-3933. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AW 7/2/07



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